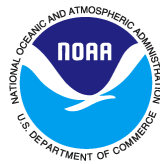




Global Emissions Initiative's (GEIA's) Vision for Improved Emissions Information

<http://www.geiacenter.org/>

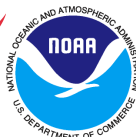


Gregory Frost

*NOAA/Earth System Research Laboratory
University of Colorado/CIRES
Boulder, CO, USA*

Co-Chair, Global Emissions Initiative

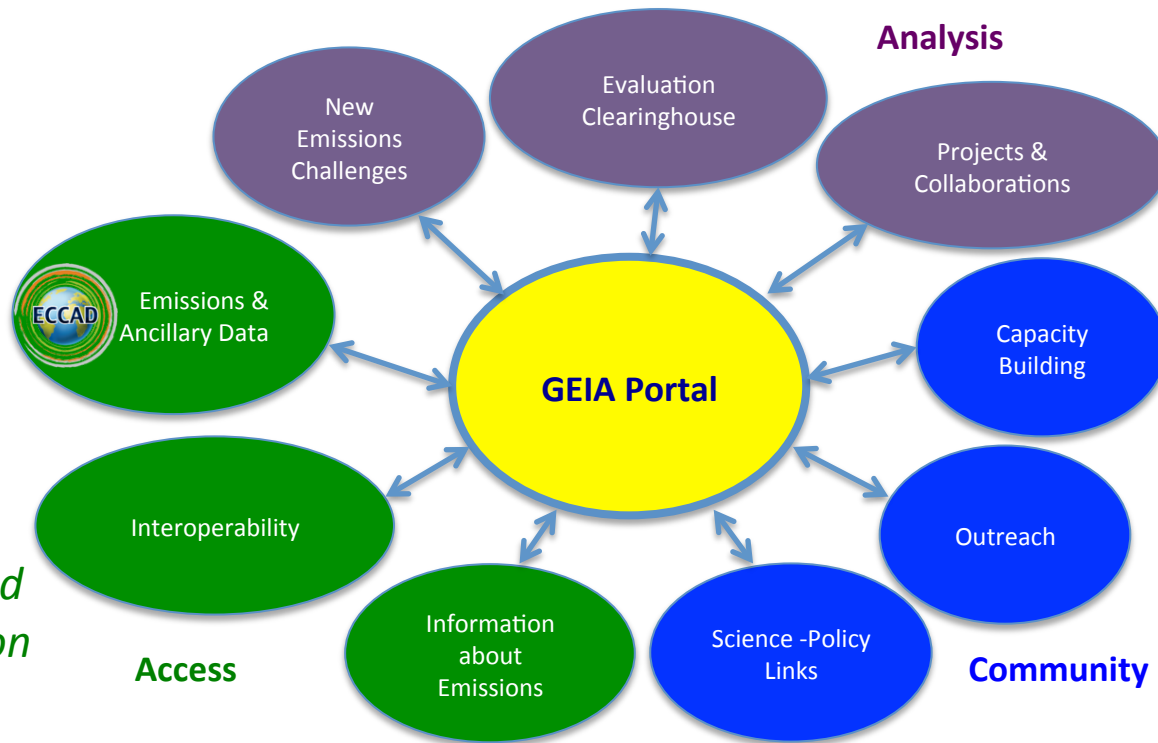
Gregory.J.Frost@noaa.gov, Gregory.Frost@colorado.edu



Mission: GEIA is a community initiative that builds bridges between environmental science and policy, by bringing together people, data, and tools to *create* and *communicate* the highest quality information about **emissions** to stakeholders and decision-makers.

Vision: By 2020, GEIA envisions being a key forum for building emissions knowledge that serves stakeholders and decision-makers in a rapidly evolving global society

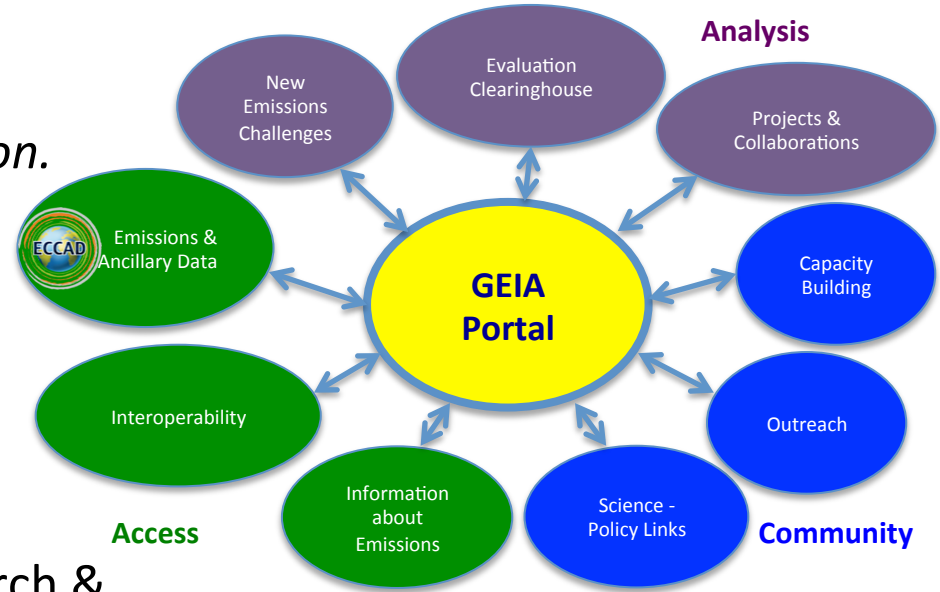
Promoting broad and consistent access to emissions information, including emissions data, metadata, and documentation



Building the scientific basis for emissions information by enhancing understanding, quantification, and analysis of emissions processes

Strengthening the community of emissions groups involved in research, assessment, operations, regulation, and policy

- New GEIA vision formulated
 - Frost et al. (2013) *Atmos. Environ.*
- New GEIA web site built
<http://www.geiacenter.org/>
- GEIA web developer change
Goodbye to Ann Keane ☹️
Hello to **Jenny Fox** 😊
- Emissions & ancillary data for research & assessment efforts distributed via **ECCAD**
 - HTAP, CCMI, CMIP, MACC, SENEX/SOAS
- Support collaboration: China WG, VOC Speciation WG, IBBI (biomass burning)
- GEIA web forum for emissions discussions
- Community historical global emissions effort
- 2014 GEIA Conference in Boulder



ECCAD = Emissions of atmospheric Compounds & Compilation of Ancillary Data <http://pole-ether.fr/eccad>

GEIA's emissions database and visualization/analysis platform

The screenshot shows the ECCAD web interface. On the left is a sidebar with navigation links: Home, Data Catalogue, Data Visualization, Emission Calcul., Project, Users, Newsletter #1, Partners, and logos for cnes, macc, ademe, IGAC, GEIA, ILEAPS, Ether, and cnrs. The main content area is titled 'THE ECCAD - THE GEIA DATABASE' and 'Emissions of atmospheric Compounds & Compilation of Ancillary Data'. It features three tabs: 'Data Catalogue' (selected), 'Data Visualization', and 'Emission Calculation'. Below the tabs is the 'Emissions Inventories' section, which is divided into 'GLOBAL INVENTORIES' and 'REGIONAL INVENTORIES'. The 'GLOBAL INVENTORIES' list includes MACCity, ACCMIP, RCPs, PEGASOS_PBL, EDGARv4.2, EDGARv3.2FT2000, RETRO, ECLIPSE_GAINS_4a, Junker-Liousse, HYDE1.3, Andres_CO2_v2013, AMAP_Mercury, GFASv1.0, GFED3, GFED2, GICC, AMMABB, MEGANv2, MEGAN-MACC, MEGANv2-CH3OH, GEIAv1, POET, IS4FIRES, GUESS-ES, and CCMi. The 'REGIONAL INVENTORIES' list includes TNO-MACC-II (Europe), TNO-MACC (Europe), EMEP (Europe), Assamoi-Liousse (Africa), India_NOx (India), SAFAR-India (India), REAS (Asia), and ChArMEX (Mediterranean). Below these is the 'Ancillary Datasets' section, which is divided into four categories: LAND COVER (UMD, CLM3, GLC2000), FIRES (WFA, GBA2000, Geoland2_BAv1_Africa), POPULATION (GPW3_Population), and GEOGRAPHICAL INFORMATION (GPW3, Region_IMAGE2.4, Pixel_Area). Red boxes and arrows highlight these sections, with labels on the right: 'Global Inventories' pointing to the Global Inventories box, 'Regional Inventories' pointing to the Regional Inventories box, and 'Ancillary Datasets' pointing to the Ancillary Datasets box. The bottom of the page shows the ECCAD v6.6.3 logo and copyright information: ©2006-2013 CNRS/SEDOO.

Global Inventories

- MACCity ACCMIP RCPs PEGASOS_PBL EDGARv4.2
- EDGARv3.2FT2000 RETRO
- ECLIPSE_GAINS_4a Junker-Liousse HYDE1.3 Andres_CO2_v2013
- AMAP_Mercury
- GFASv1.0 GFED3 GFED2 GICC AMMABB
- MEGANv2 MEGAN-MACC MEGANv2-CH3OH
- GEIAv1 POET

Developed for ongoing projects

- IS4FIRES
- GUESS-ES
- CCMI

Regional Inventories

- TNO-MACC-II (Europe) TNO-MACC (Europe)
- EMEP (Europe) Assamoi-Liousse (Africa)
- India_NOx (India) SAFAR-India (India)
- REAS (Asia)

Developed for ongoing projects

- ChArMEX (Mediterranean)

Ancillary Datasets

- LAND COVER**: UMD CLM3 GLC2000
- FIRES**: WFA GBA2000 Geoland2_BAv1_Africa
- POPULATION**: GPW3_Population
- GEOGRAPHICAL INFORMATION**: GPW3 Region_IMAGE2.4 Pixel_Area

For more information, contact the ECCAD team:

Chairs: Claire Granier (France/USA/Germany) and Cathy Liousse (France)

Project Manager: Mireille Paulin (France)

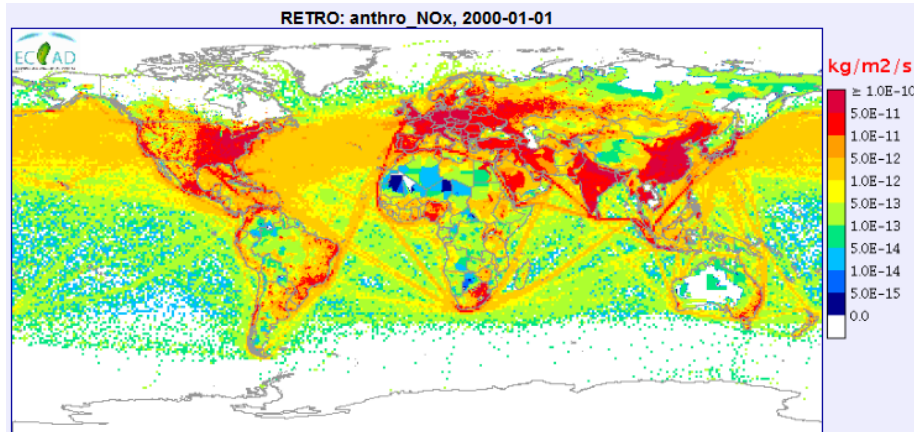
Technical Team: Sabine Darras, Aude Mieville, Richard Hitier (France)

Advisory Board: Greg Frost (USA), Martin Schultz (Germany), Hugo Denier van der Gon (The Netherlands), Johannes Kaiser (UK/Germany), Frederic Chevallier (France), Dominique Serca (France), Beatrice Marticorena (France)

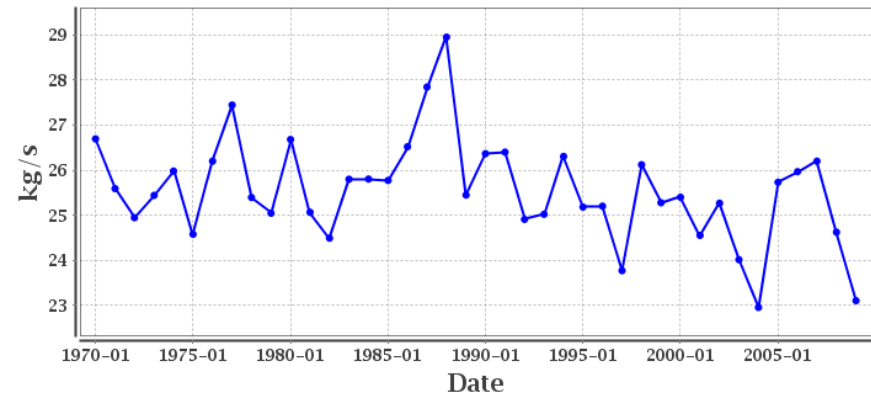
Examples of ECCAD tools

<http://pole-ether.fr/eccad>

Visualization of emissions maps

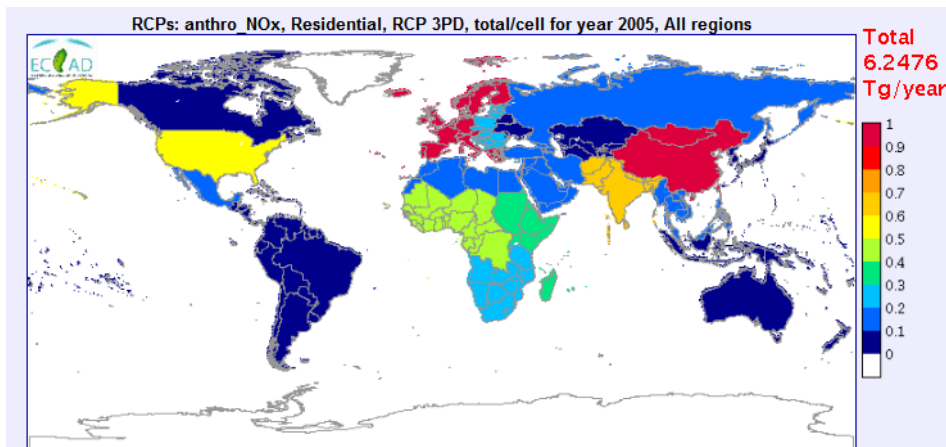


Temporal variation of national emissions biogenic_isoprene, total/region : GUESS-ES, USA

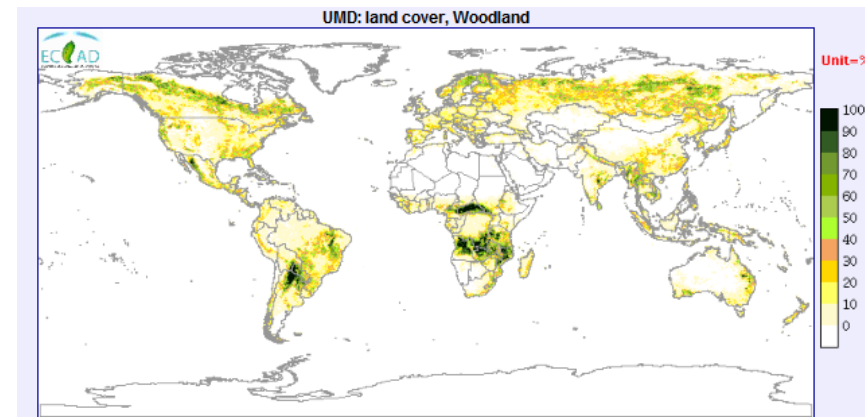


Temporal profile at 0.5/0.5 from 1970-01-01 to 2009-12-31

Total emitted for different regions



Ancillary data



Currently under development: maps of comparison calculations, scatter plots

Limitations of ECCAD-1 portal: 0.5° or 1° resolution only, complicated download system, data selection assumes prior knowledge of dataset

ECCAD Version 2 portal under development

<http://eccad2.sedoo.fr/interface/>

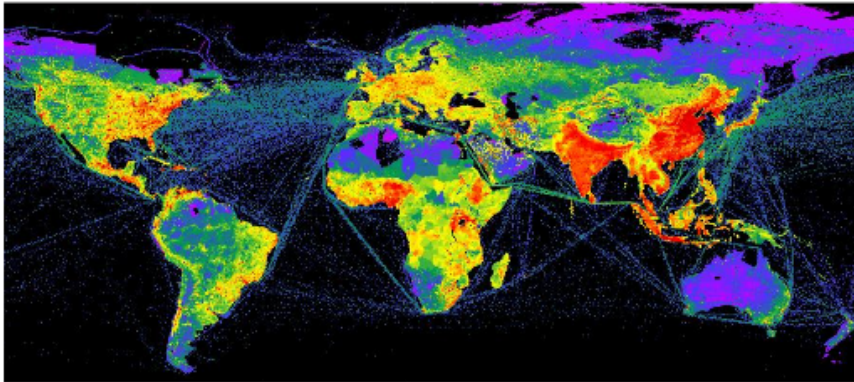


ECCAD

Emissions of atmospheric Compounds & Compilation of Ancillary Data

Thanks to EPA!

Home ▾ Data catalogue ▾ Data Access ▾



Welcome to ECCAD - GEIA :

The ECCAD - GEIA portal provides access to HTAPv2 global inventories and a preliminary display tool.

- Spatial resolution 0.1x0.1°
- Years 2008 and 2010
- 9 Species and 7 sectors
- Data Flux and annual gridded totals
- Metadata See Data description
- Data are downloadable as interoperable NetCDF CF-compliant files
- [HTAPv2 documentation](#)



Data

- Any lat/lon resolution
- Country-level data (summer 2014)
- Archive adapted to interoperability
- Detailed metadata & documentation

Download

- Regridding to any lat/lon grid
- Options for lon/lat order:
 - N/S or S/N; 0-360 or -180/180

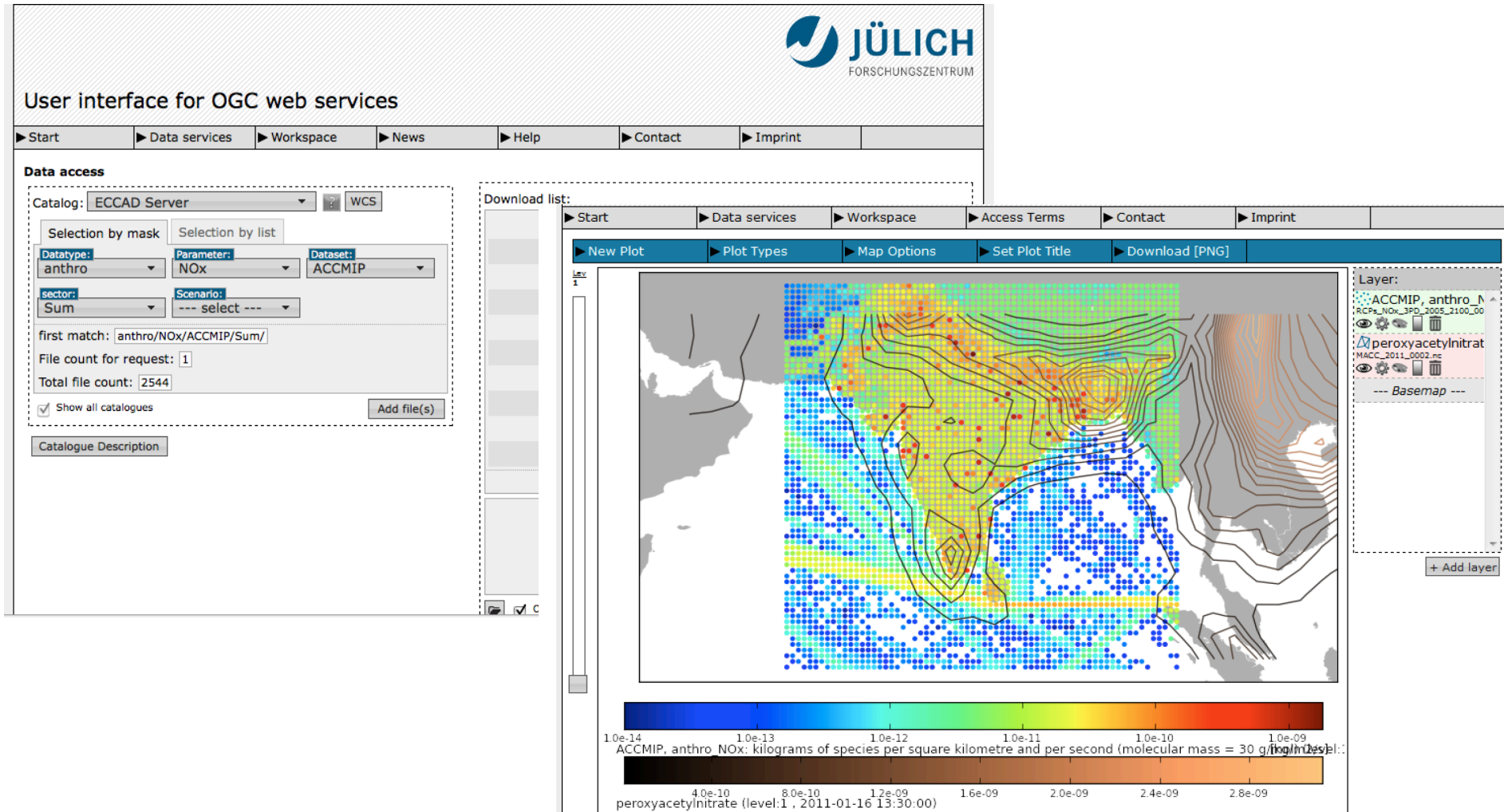
HTAPv2 = only dataset currently available

Site under active development; expect frequent changes!

Distributed Emissions Data for Analysis

ECCAD is a node in FZ Jülich WCS (Martin Schultz et al.)

<http://join.iek.fz-juelich.de/>



16th GEIA Conference

Bridging Emissions Science and Policy



10-11 June 2014

*National Center for
Atmospheric Research
Boulder, Colorado, USA*

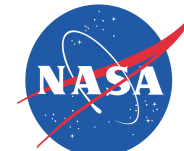
Submit Abstracts Now!

Deadline: 17 January 2014

www.geiacenter.org



NCAR



 **ileaps**



Conference Objective

Explore role of emissions as crucial link between scientific innovation and societal development

Intended Audience

- Emissions information developers and users
- Research, regulatory, policy, and assessment communities



Conference Location: NCAR Center Green

Emissions Data Issues and Needs

- Emissions data are multi-dimensional: Space, Time, Pollutant, Source, Parameter
- Data developed from/informed by science + regulation, policy, economics, ...
- Datasets lack consistency: Different developers, methodologies, applications
- Other issues with emissions data: Accessibility, Documentation, Developer-User Interactions, Evaluation/Uncertainty Analysis
- Metadata not generally compliant with standards for other types of earth science data
- Approaches for handling distributed emissions data are in development...more generic approaches are needed
- Need to learn from and link to other communities: air quality/climate modeling groups, monitoring/satellite/field observations, assessment/future scenarios, health, etc.

Some Technical Goals for Emissions Data

- Metadata definitions and conventions
- Translating between inventories: pollutants, units, sectors
- Spatial projection and allocation
- Visualization: maps, time series
- Statistics: area or grid-box totals, sector partitioning
- Dataset comparisons: arithmetic, plotting
- Comments on data and on data comparisons
- Best practice recommendations for data/metadata

Suggestions for Moving Forward

ESIP AQ WG and GEO AQ CoP

- Stay connected, keep collaborating, and build connections
- Identify common scientific interest areas
- List existing resources (human, virtual)
- Streamline documentation
- Work on data/metadata guidance recommendations
- Identify support needs (human, virtual)
- Name change? **Air Quality** → **Atmospheric Composition**